Comments

EPA: None

State: None

Company: See attached letter dated February 22, 2011

ALLIANT ENERGY

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February 22, 2011

Via e-mail to: hoffman.stephen@epa.gov and kohler.james@epa.gov

Mr. Stephen Hoffman
U.S. Environmental Protection Agency (5304P)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

**Re: Response to Draft Assessment Reports
M.L. Kapp Generating Station**

Dear Mr. Hoffman:

This letter is sent on behalf of Interstate Power and Light Company's ("IPL") M.L. Kapp Generating Station. IPL received the Draft Report of Dam Safety Assessment of Coal Combustion Surface Impoundments dated December, 2010 ("Draft Report"). The site assessment was conducted by the United States Environmental Protection Agency's ("EPA") contractor AMEC Earth & Environmental, Inc. on October 27, 2010. EPA's cover e-mail accompanying the Draft Report requests that comments be submitted to EPA by February 23, 2011, and provides for a business confidentiality claim covering all or part of the information.

CONFIDENTIAL BUSINESS INFORMATION CLAIM

IPL is claiming business confidentiality for both the Draft and Final Reports associated with the site assessment of the coal combustion residual impoundments at the M.L. Kapp Generating Station and for the comments submitted in this letter in their entirety, a claim which is being made in accordance with 40 C.F.R. Part 2, Subpart B.

Per the criteria established by 40 CFR. Part 2, Subpart B, §2.208, the documents for which confidential treatment is requested are entitled to confidential treatment because: (1) this claim is timely and has not been waived, (2) IPL has taken reasonable measures to protect the confidentiality of the information and intends to continue to take such measures, (3) the information is not reasonably obtainable without IPL's consent by other persons by use of legitimate means, (4) no statute specifically requires disclosure of this information, and (5) the disclosure of the information is likely to cause substantial harm to IPL's competitive position.

All of the documents for which confidential treatment is requested help IPL maintain its competitive position. IPL protects the confidentiality of this information by making it available only to those within the company with a legitimate need to know the information for purposes of performing their jobs.

COMMENTS ON THE DRAFT ASSESSMENT

Listed below are the comments associated with the Draft Report for the IPL - M.L Kapp Generating Station.

Italics' indicate language in Draft Report. **Bold** indicates suggested language.

Cover Page:

1. Cover Page – Remove "*Alliant Energy*" and insert "**Interstate Power and Light Company "IPL**"."
2. Cover Page, Second Page - Remove "*Alliant Energy*" and insert "**Interstate Power and Light Company**"

Section 1.1:

1. Page 1, first paragraph – Remove "*Alliant Energy*" and insert "**Interstate Power and Light Company**".
2. Table 1 – For Greg Hudson and Kurt Hubbart, the correct Company/organization is **"Interstate Power and Light Company"**. For William Skalitzky, the correct Company/Organization is "**Alliant Energy Corporate Services, Inc.**"

Section 1.2:

1. Page 1, first paragraph – Remove "*Alliant Energy*" and insert "**Interstate Power and Light Company**" or **"IPL"**.
2. Page 1 – *"Each settling area contains a Primary and Secondary Pond".* In both of these ash settling areas, the foot prints of these ponds were within the original ash pond foot print. The ponds were modified in the years identified in the report to aid in the removal of settled ash.

Section 1.2.1:

1. Page 2, first paragraph – The engineers assigned a *"Significant Hazard"* rating to the Emergency Ash Secondary Settling Basin. A significant hazard is given to ponds where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. We believe the pond should be rated as a "**Low Hazard"** for the following reasons:
   - Misoperations – The ash ponds were designed to remove accumulated ash on an as needed basis. The first pond (secondary Pond), is where

most of the ash is generated. The secondary pond is used to further clarify the water to ensure compliance with the site's NPDES permit.

- Economic Loss – A failure of the pond would not cause economic loss since there is very little ash in the pond; the water stored within the pond meets the NPDES limits; and a failure of the secondary pond could not drain the contents of the primary pond. A failure could not alter barge traffic or impair/degrade the Beaver Channel from a recreational aspect.
- Environmental Damage – As mentioned above, the water stored within the secondary pond already meets the effluent limits of the NDPES Permit. What little ash in the pond would stay within the confines of the pond or be captured in the lowlands of Mill Creek. A release of ash from this pond would not be in the same level as the TVA Kingston release.
- Disruption of Lifelines – There are no bridges or other lifelines downstream from the ash pond that would prevent or alter emergency vehicles or services as a result of a failure with the secondary emergency ash pond.

Section 1.2.2:

1. Page 2, first paragraph – Remove "*Alliant Energy*" and insert "**Interstate Power and Light Company**" or "**IPL**".
2. Page 2, first paragraph, last sentence – Remove the entire last sentence starting with *"Alliant Energy"* and insert the following language; "**IPL is authorized to continue discharging under the existing NPDES Permit since the NPDES Permit Renewal Application was submitted at least 180 days prior to the expiration of the permit. The reason for the delay in issuance of the permit is a backlog of NPDES permit renewal applications at the State of Iowa.**"

Section 1.4:

1. Page 2, first paragraph, third sentence – Fly ash is not typically sluiced to either pond but is stored in the fly ash silo for implementation into the Beneficial Reuse Program as a replacement in the production of cement. Fly ash is only sluiced to the ponds if the ash silo is full and the cement producing facilities are no longer accepting our product.
2. Page 3, third paragraph, second bullet – This bullet describes various process wastewaters that are discharged into the emergency ash pond for treatment prior to discharging through Outfall 004. Remove the words *"turbine cleans"* and *"boiler cleans"* and insert the following language that fully describes the nature of the wastewater generated and placed into the emergency ash pond: "**Non-chemical turbine/boiler cleans and clean rinsates waters from turbine/boiler chemical cleans that are tested for various metals prior to discharging into the emergency ash ponds**".

3. Page 3, last paragraph - Remove "*Alliant Energy*" and insert "**Interstate Power and Light Company**" or "**IPL**".

Section 1.4.1:

1. Page 3, second paragraph, fourth sentence – *"Flow is discharged from the secondary pond by pump to permitted NPDES Outfall 003"*. Remove *"or to the plant facility for beneficial reuse"* as this is not the case. Infrastructure is not in place to reroute the water back to the plant.

Section 1.4.2:

1. Page 4, first paragraph, fourth sentence – Please insert "**inverted"** in front of *"culvert pipe"*.

Section 1.4.2:

1. Page 4, first paragraph – The value for the *"Main Ash Pond Settling Pond Primary"* states there is *"66,7001 cubic yards"* stored in the pond. We believe this volume should be **"66, 700 cubic yards"**. Also, during the EPA Assessment, this pond was being actively dredged. According to our records, approximately 9,500 tons of ash was removed and was beneficially reused in the cement replacement market. Assuming this material weighs 1.5 tons per cubic yard, this dredging activity removed 14,250 cubic yards of ash. The correct volume remaining in the pond is 52,400 cubic yards.

Section 1.7:

1. Remove "*Alliant Energy*" and insert "**Interstate Power and Light Company**" or "**IPL**".

Section 2.2.1:

1. Page 6, Emergency Primary Pond, first sentence – Please insert the following language regarding the internal dike between the Primary and Secondary Ash Ponds of the Emergency Ash Pond System: "**The internal dike allows for proper management of the Emergency Ash Pond system by creating a mechanism to remove settled ash on as needed basis instead of allowing the ponds to be completely filled with settled ash"**.

Section 2.2.2:

1. Page 6, Emergency Primary Pond, first sentence – To be consistent the comment in Section 1.4.2; remove *"connector pipe"* and insert **"inverted culvert pipe"**.
2. Page 6, Emergency Secondary Pond, first sentence – The sentence needs additional wording to describe how the effluent is discharged to Outfall 004. Please insert the following **"Wastewater flows into the Outfall 004 pumphouse where three effluent pumps are located. Levels in the pond**

are controlled by a pump float system and a weir box leading into the pumphouse. The water level in the pond is controlled by removable weir plates".

Section 2.3:

1. Page 6 and 7, Main Ash Pond, second paragraph– After the following words *"The resulting two ponds are smaller than the original single pond"* insert the following **", which allows the facility to properly manage the settled ash in the pond by performing periodic dredging. During the visual portion of the assessment, the primary pond was out of service and was actively being dredged to increase wastewater treatment capabilities of the pond"**.

Section 2.3.1:

1. Page 7, Main Ash Pond, first paragraph, first sentence – After the following words "There is a sizeable amount of dredged and stacked ash throughout the areas of the ponds" inserts the following **"since the primary pond was out of service and was actively being dredged to increase wastewater treatment capabilities of the pond"**.

Section 2.3.2:

1. Page 7, Main Ash Pond, first paragraph – There is no discussion regarding the pumphouse structure and how the effluent is pumped to NPDES Outfall 003. May we suggest: **"Wastewater flows into the Outfall 003 pumphouse where three effluent pumps are located. Levels in the pond are controlled by a pump float system and a weir box leading into the pumphouse. The water level in the pond is controlled by removable weir plates".**

Section 3.2.1:

1. Page 8, Table 4, Significant/Moderate Hazard Potential – The second column of the table lists the hydraulic design criteria as ½ of the PMF or Probable Maximum Flood. In Section 1.2.1, the engineering team is assigning the Secondary Pond of the Emergency Ash Pond System a *"Significant Hazard"* and further in Section 3.2.1, *"the CCW impoundments as the M.L. Kapp Power Station Fall within the smallest storm event designation for the 100-year, 24-hour design storm be used to evaluate the Emergency Ash Ponds".* This statement contradicts Table 4 and the Final Ash Assessment Report prepared by Sargent and Lundy on behalf of the M.L. Kapp Generating Station.

Section 3.2.2:

1. Page 9, Hydrologic Design Criteria, Main Ash Pond - Please review the attached Final Ash Assessment Report dated January 11, 2011 that was prepared by Sargent and Lundy on behalf of the M.L. Kapp Generating Station. The questions and assumptions made by the EPA Assessment team throughout this

section can be found in this final Sargent and Lundy Report and specifically Calculation MLK-C-001. Listed below are the specific comments:

- Calculation MLK-C-001 assumed that the upper Main Ash Pond would be in constant operation during the 100-year, 24-hour rainfall event. Thus, the upper Main Ash Pond would have a water level just above the elevation of the decanting outlet structure and would provide no storage volume. Furthermore, due to the assumed lack of storage volume, the travel time from the upper Main Ash Pond to the discharge pond in the original Ash Settling Basin was not considered.
- Information was not available on the peak waste stream flow rate into the Main Ash Pond, thus Calculation MLK-C-001 assumed that the pumping rate from the pump house within the discharge pond could convey the waste streams sluiced to the Main Ash Pond. The calculation assumed that the difference between the outflow from the pump house and the maximum waste stream inflow rate would be minimal. Thus, the ability of the pond to store the entire runoff volume was evaluated. Also, bottom ash is not sluiced to the main ash pond on a continuous basis. Since 2004, the ash sluice pumps ran an average of 364 minutes/day or a total flow into the ponds at 0.765 Million Gallons per Day. During plant operations, generally bottom ash is sluiced out to the ponds at least once per 8 hour shift. Normally, a sluicing event lasts between two and three hours in duration.

<u>Section 3.2.3:</u>

1. Page 11, Hydrologic Design Criteria, Emergency Ash Pond - Please review the attached Final Ash Assessment Report dated January 11, 2011 that was prepared by Sargent and Lundy on behalf of the M.L. Kapp Generating Station. The calculation evaluates the adequacy of the Emergency Ash Pond to contain and convey the stormwater runoff from the half Probable Maximum Flood (1/2 PMF). There is some confusion as to what event the Emergency Ash Pond should be evaluated for; however the calculation does evaluate the pond's ability to contain and convey the 100-year, 24-hour rainfall as part of the ½ PMF analyses.

<u>Section 3.3:</u>

1. Page 11, Structural Adequacy & Stability, Emergency Ash Pond, second paragraph - Please review the *Westar Energy"* reference and insert "**IPL".**
2. Page 11, Structural Adequacy & Stability, Emergency Ash Pond, third paragraph - Please review the attached Final Ash Assessment Report dated January 11, 2011 that was prepared by Sargent and Lundy on behalf of the M.L. Kapp Generating Station.

Section 3.5.1:

1. Page 17, Safety Assessments, first paragraph - Remove "*Alliant Energy*" and insert "**Interstate Power and Light Company**" or "**IPL**".

Section 4.1:

1. Page 19, Acknowledgement of Management Unit Conditions, Main Ash Pond and Emergency Ash Pond Ratings – Both the Main and Emergency ash ponds were rated as "*Poor*" due to lack of documentation. Please change these ratings to "**Satisfactory**" based on our comments and the attached Final Ash Assessment Report prepared by Sargent and Lundy on behalf of the M.L.Kapp Generating Station.

Section 4.2:

1. Page 19, Recommendations – Listed below are the recommendations listed on Page 19 and our associated response:
   - "*Completion of the hydrologic and hydraulic study for the Main Ash Ponds*" – **Complete. See attached report and specific comments in Section 3.2.1, 3.2.2, and 3.2.3 listed above and specific comments in Section 4.2.1 listed below**.
   - "*Hydrologic and hydraulic information for the Emergency Ash Ponds*" – **Complete. See attached report and specific comments in Section 3.2.1, 3.2.2, and 3.2.3 listed above and specific comments in Section 4.2.1 listed below**.
   - "*More complete stability analyses*" – **See specific comments in Section 4.2.1 listed below.**

Section 4.2.1:

1. Page 20, Hydrologic and Hydraulic Recommendations, Main Ash Settling Ponds – Calculation MLK-C-001 assumed that the upper Main Ash Pond would be in constant operation during the 100-year, 24-hour rainfall event. Thus, the upper Main Ash Pond would have a water level just above the elevation of the decanting outlet structure and would provide no storage volume. Furthermore, due to the assumed lack of storage volume, the travel time from the upper Main Ash Pond to the discharge pond in the original Ash Settling Basin was not considered. Information was not available on the peak waste stream flow rate into the Main Ash Pond, thus Calculation MLK-C-001 assumed that the pumping rate from the pump house within the discharge pond could convey the waste streams sluiced to the Main Ash Pond. The calculation assumed that the difference between the outflow from the pump house and the maximum waste stream inflow rate would be minimal. Again, ash sluicing is not 24 hours per day but averaged 364 minutes per day since 2004. Thus, the ability of the pond to store the entire runoff volume was evaluated.

2. Page 20, Hydrologic and Hydraulic Recommendations, Emergency Ash Settling Ponds – Please see the attached Final Ash Assessment Report prepared by Sargent and Lundy on behalf of the M.L. Kapp Generating Station. The calculation evaluates the adequacy of the Emergency Ash Pond to contain and convey the stormwater runoff from the half Probable Maximum Flood (1/2 PMF). There is some confusion as to what event the Emergency Ash Pond should be evaluated for however the calculation does evaluate the pond's ability to contain and convey the 100-year, 24-hour rainfall as part of the ½ PMF analysis.

Section 4.2.2:

1. Page 20, Geotechnical and Stability Recommendations, Perform slope stability analyses for the Maximum Water Levels in the Emergency Pond, third paragraph – The water level selected (585') is the steady state level for the pond that is maintained by the plant. A higher level at 590', the top of dike, could be performed. However, if this higher level is due to the 100 year storm event and represents a short duration rise in the water level, there would only be an insignificant change in the phreatic line through the clay dike section due to the low permeability of the dike materials. Thus, the stability of the downstream slope of the dike would not be affected and the factor of safety would not change since the minimum factor of safety is located within the downstream slope of the dike (Figures 5 and 6 of calculation KAPP-SS-001).
2. Page 20, Geotechnical and Stability Recommendations, Perform rapid drawdown event due to flooding from the Mississippi River in the Emergency Pond, third paragraph – A rapid rise and fall of the water against the downstream slope of the Emergency Pond due to a flood condition from the Mississippi River would have minimal effect on the dike stability. Since the dike material is composed of clay material, a short duration of water against the dike would result in minimal saturation of the downstream slope. This would be approximately 2" to 10" of saturation based on typical permeability values for compacted clay soils. Thus the results of the slope stability analyses would basically be unchanged from those shown on Figure 6 of calculation KAPP-SS-001. If saturation could occur, the results of this rapid drawdown case would be similar to that evaluated in Figure 9 of calculation KAPP-SS-001 since the dike slope is symmetrical.
3. Page 20 and 21, Geotechnical and Stability Recommendations, Degree of Compaction of the CCW material - Pictures taken during the walkdown of the ponds indicate that the loose material in the pond is standing on a near vertical face. See photographs P-23, P-24, and P-25 in the attached Final Ash Assessment Report prepared by Sargent and Lundy on behalf of the M.L. Kapp Generating Station. Considering a 2H:1V slope, the friction angle would be at least 26.5^0. These slopes are definitely steeper than 2H:1V. Published data is also available that states that flyash may also have a cohesion component, which increases with time after deposition in ponds or after fill compaction. This

component is ignored in the calculation. Based on this, a friction angle of 25^0 seems appropriate and conservative.

4. Page 21, Geotechnical and Stability Recommendations, last sentence concerning the *"The analyses presented appear limited to a circular surface; different types of failure surfaces should be analyzed and optimized".* - The circular failure surface is the most widely used approach because computer programs have been created to perform multiple analyses to determine the most critical failure surface with the lowest factor of safety. This is accomplished utilizing a general grid approach. Most engineers are satisfied with this approach when the geometry and geologic profile is relatively uniform. Wedge analyses are established based on the engineer's best guess for the potential critical surface utilizing the slope geometry and the subsurface profile data. Wedge analyses would be appropriate if one or more of the soil layers beneath the berm structure possessed exceptionally low strength (typically soft to very soft clays) and caused concern for potential instability along a plane through these materials. This is not the case with the in situ soil layers that support the dikes at the M.L. Kapp Generating Station. In the absence of such weak materials in the ground beneath the dikes, it is more appropriate to use the circular failure plane configuration in the slope stability analyses.

Figures:

1. Figures 1; 2; 3; 4; 5; 6; and 7 - Remove "*Alliant Energy*" and insert "**Interstate Power and Light Company**" or "**IPL**".

Appendix:

1. Appendix B Site Photo Logs - Remove "*Alliant Energy*" and insert "**Interstate Power and Light Company**" or "**IPL**" on photo pages.
2. Appendix B, Site Photo EP-5 and EP-6 – Both photos describe the connecting pipe of the primary ash settling pond and the secondary ash settling pond as *"connection pipe"*. Please insert "**inverted**" in front of connection pipe.
3. Appendix B, Site Photo MP-3 – Remove *"Main"* in the photo description as there is only one M.L. Kapp Generating Station.
4. Appendix C, Inventory of Provided Materials – The fifty supplied documents listed appear to be from the Hoosier Energy facility. Please remove this Appendix and insert the documents that were provided for the M.L. Kapp Generating Station.

REQUEST FOR CONFERENCE CALL WITH AMEC TO REVIEW COMMENTS

Finally, because of the technical complexity and factual detail contained in the Draft Report, IPL believes it would be efficient and helpful to conduct a conference call between IPL and AMEC to review the details of these comments prior to its preparation of a Final Report. IPL would be happy to coordinate the time and set up a call-in number. IPL specifically requests such a discussion.

IPL appreciates this opportunity to provide comments on the Draft Report for the M.L. Kapp Generating Station. If you have any technical questions, please contact William Skalitzky at (608) 458-3108. If you have any legal questions, please contact Dan Siegfried at (319) 786-4686.

Very truly yours,

Gregory R Hudson

Gregory R. Hudson
Plant Manager

cc: James Kohler - EPA
William Skalitzky - AECS
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Terry Kouba – AECS
Vernon Hasten - IPL